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Section: 1

Subject : Solution of Sheet 2,3 Micro.

Sheet 2

[1] Registers are used during application programming and are specified by the instructions.

Like : (EAX, Ax, AH, AL, EBX, BX ...).

[2] It points to the next instructions in a program, which is used by the microprocessor to find the next sequential instruction in a program located within the code segment.

[3] They are available in the 80386, 80486, and Pentium through Pentium 4 microprocessors.

[4] (A) Starting address = $1000H+0 = 10000H$

Ending address = $10000H+FFFF = 1FFFFH$

(B) Starting address = $1234H+0 = 12340H$

Ending address = $1234H+FFFF = 2233FH$

(C) Starting address = $2300H+0 = 23000H$

Ending address = $23000H+FFFF = 32FFFH$

(D) Starting address = $E000H+0 = E0000H$

Ending address = $E0000H+FFFF = EFFFFH$

[5] (E) Current address = (CS) 0 + IP = 10000H+2000H = 12000H

(F) Current address = (CS) 0 + IP = 20000H+1000H = 21000H

(G) Current address = (CS) 0 + IP = 23000H+1A00H = 24A00H

(H) Current address = (CS) 0 + IP = 1A000H+B000H = 25000H

[6] It is EAX, ECX, ESI register.

[7] (I) Memory location address = (DS) 0 + DI = 10000H+2000H = 12000H

(J) Memory location address = (DS) 0 + SI = 20000H+1002H = 21002H

(K) Memory location address = (SS) 0 + BP = 23000H+3200H = 26200H

(L) Memory location address = (DS) 0 + BX = A0000H+1000H = A1000H

[8] (M) Memory location address = (DS) 0 + EAX = 20000H+3000H = 23000H

(N) Memory location address = (DS) 0 + ECX = 1A000H+2000H = 1C000H

(O) Memory location address = (DS) 0 + ESI = C0000H+A000H = CA000H

(P) Memory location address = (SS) 0 + ESP = 80000H+9000H = 89000H

Sheet 3 Addressing Modes

[1] (A) It copies the contents of BX to AX.

(B) It copies the contents of AX to BX.

(C) It copies the contents of EBP to ESP.

(D) It copies the contents of CS to AX.

[2] The wrong is that BL, CX Registers aren't of the same size, where BL is 8 bit register and CX is 16 bit register.

[3] The wrong is that we can't move between two segment registers.

[4] (A) The instruction is: MOV EDX, EBX

(B) The instruction is: MOV CL, BL

(C) The instruction is: MOV AX, DS

[5] (A) The instruction is: MOV AL, 12H

(B) The instruction is: MOV AX, 123AH

(C) The instruction is: MOV EBX, 1200A2H

[6] It copies AL into the memory location addressed by 2000H

[7] (A) The memory address is: (DS) 0 + 1234H = 02000H+1234H = 3234H

(B) The memory address is: $(DS) 0 + BX = 02000H + 0300H = 2300H$

[8] The wrong is that memory to memory moves aren't allowed except with string instructions.

[9] MOV BX, DATA copies the contents of the memory location (DATA) to BX.

MOV BX, OFFSET DATA copies the offset of the memory location (DATA) to BX.

[10] (A) The memory address is: $(DS) 0 + 100H = 12000H + 100H = 12100H$
address is: $(DS) 0 + SI + 100H = 12000H + 0250H + 100H = 12350H$

[11] (A) The memory address is: $(DS) 0 + SI = 11000H + 100H = 11100H$
(B) The memory address is: $(DS) 0 + BX + SI = 11000H + 0200H + 0500H = 11700H$

[12] (A) The memory address is: $(SS) 0 + BP + 200H = 14000H + 1500H + 200H = 15700H$

(B) The memory address is: $(SS) 0 + BP + SI - 200 = 14000H + 1500H + 0100H - 200 = 15400H$

[13] (A) The memory address is: $(DS) 0 + EAX + EBX = 100H + 1000H + 2000H = 3100H$

